

**DELTA PROTECTION COMMISSION**

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September 12, 1997

To: Delta Protection Commission

From: Margit Aramburu, Executive Director

Subject: Conditions Proposed by U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) for Corps Regionwide Permits to Require Installation of Fish Screens as a Condition of Maintenance of Existing Water Intake Devices (Pumps and Siphons) in the Delta

Background:

A few weeks ago, staff became aware of a proposal by FWS and NMFS to condition the Corps' nationwide permit which authorizes maintenance and repair of water intake structures in the Delta to require installation of a fish screen. This would be a new condition; currently only *new* water intake structures require installation of a fish screen. After a meeting on August 19, 1997, the Corps has asked for written comments on the proposed condition.

Recommendations of U.S. Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS):

FWS and NMFS staff indicated there are rare and endangered fish in and around the Delta during the irrigation/growing season. There is concern that the cumulative impact of the "take" from the existing unscreened 1,800 water diversions in the Delta.

Water Diversions in the Delta:

There are a large number of water intake structures in the Delta to serve the agricultural use which has been on-going since the late 1800's. Most of these diversions are small. In portions of the North Delta, water is pumped onto islands. Where pumps are used, there is an energy source on site, such as electric lines.

In the Central and South Delta, farms are served by multiple siphons. Siphons are gravity operated structures which are "turned on" only at those times when irrigation is needed. There is no pump and no energy source beyond the tide. Because there is no infrastructure

cost, siphons have been sized and located to serve smaller areas, such as specific fields, not entire islands. By using many siphons, a farmer can be very specific about the timing and volume of water brought onto a field. There is an overall benefit to minimizing irrigation water volume because all excess, or surplus, irrigation water must be pumped off of each island at its lowest elevation.

Siphons are not always used each growing year; they are not used all at the same time; they are not used for long periods of time. This is in contrast to a centralized water diversion which might serve an entire island with varying crops and irrigation needs; or a managed wetland, urban, or industrial water user who has more constant water needs. The maximum irrigation in a normal year is June to mid-August. Early crops, such as wheat, are harvested in late June; those fields would not be irrigated in late summer.

#### Cost of Installing New Fish Screens:

The cost of installing new fish screens depends on a variety of factors including: location, size of water diversion device, presence or absence of power source, etc. The June 6, 1994 DFG memo states that small diversions of 15 cfs or less can be screened for about \$2,000 per cfs, assuming that power is available; medium sized diversions of 15 to 250 cfs can be screened for about \$5,000 per cfs; large and/or complex diversions can cost up to \$10,000 per cfs. At the August 19, 1997 meeting, there was general agreement that the cost to screen a siphon in the Delta would cost approximately \$50,000 per siphon, if there is power on site.

The February 2, 1994 DFG memo states that under Section 6020 of Fish and Game Code, if existing diversions of more than 250 cfs are ordered to be screened by DFG, the costs shall be shared by DFG.

The June 13, 1997 DFG Special Order Relating to Incidental Take of Sacramento River Spring-Run Chinook Salmon During the Candidacy Period (Special Order) indicates that the federal government, through the CVPIA program, will share up to 50% of costs of constructing screens on unscreened diversions to "assist the State of California in efforts to develop and implement measures to avoid losses of juvenile anadromous fish resulting from unscreened or inadequately screened diversions on the Sacramento and San Joaquin rivers, their tributaries, the Sacramento-San Joaquin Delta, and the Suisun Marsh." All funds through FY 97-98 are committed; however, there may be funds available in FY 98-99.

#### Existing State Policy Regarding Fish Screens:

Department of Fish and Game (DFG) has outlined the DFG's Fish Screening Policies in a memo dated February 2, 1994, and updated April 14, 1997. DFG has also released a Fish Screen Action Plan dated June 6, 1994. DFG's plan states the highest priorities are:

(1) Diversions serving lands owned and/or operated by DFG (*Yolo Bypass Wildlife Area, Woodbridge Ecological Reserve, and Calhoun Cut Ecological Reserve*); (2) Diversions larger

than 250 cfs (*none identified*); and (3) Diversions of less than 250 cfs (*Sacramento River from the mouth of the American River to Delta Cross Channel: 316 unscreened diversions; Venice Island: 24 diversions; McDonald Island: 43 diversions; Twitchell Island: 21 diversions; and Bacon Island: 34 diversions*).

#### Ongoing Studies of Fish Entrainment in the Delta:

DWR has an ongoing unscreened diversion assessment program in the Delta. Other recent studies have not yet been published, for example, the state-federal Interagency Ecological Program for the San Francisco Bay/Delta Estuary (IEP) prepared a study on Twitchell and Bacon Islands; those findings have not yet been released. An IEP report on a 1992 Delta Agricultural Diversion Evaluation indicates that eggs and larval fish are entrained by water diversions, and the vulnerability of eggs and larval fish vary between species and depends on seasonal occupancy, abundance, and distribution of a species in the adjacent channel and on operations of the diversion. The screens are effective for reducing entrainment of larval fish four to five millimeters and larger.

#### Delta Protection Commission Policies:

The Delta Protection Act of 1992 does not specifically address fish screens on Delta water diversions. The Act does support preservation and protection of habitat, and states that the resource values of the delta have deteriorated and that further deterioration threatens the maintenance and sustainability of the delta's fish populations. In addition, the Act recognizes the economic value of the agricultural land of the Delta (see Public Resources Code sections 29703(a); 29705 and 29706).

The policies and recommendations in the Commission's adopted Plan do not specifically address fish screens on Delta water diversions. The policies and recommendations do support enhancement of aquatic habitats and protection of economic viability of agriculture (see Environment R-4; Agriculture P-1; Agriculture P-4; and Water R-3).

#### Staff Recommendation:

The Commission should consider sending a letter to the Corps requesting the proposed condition to install fish screens on existing water diversions in the Delta be set aside, allowing the current State policy on fish screens be implemented. A draft letter is attached.

DRAFT

September 26, 1997

Jim Monroe, Chief, Sacramento/San Joaquin Delta Office  
Regulatory Branch  
U.S. Army Corps of Engineers, Sacramento District  
1325 J Street  
Sacramento, CA 95814-2922

Subject: Conditions Proposed by U.S. Fish and Wildlife Service (FWS) and National  
Marina Fisheries Service (NMFS) for Corps Regionwide Permits to Require  
Installation of Fish Screens as a Condition of Maintenance of Existing Water  
Intake Devices in the Delta

Dear Mr. Monroe:

Thank you for allowing Delta Protection Commission staff to participate in the meeting held in your office on August 19, 1997 to discuss the proposed condition to require installation of a fish screen when maintenance of an existing water intake devise is authorized by a Corps nationwide permit. The Commission is a State land use planning and regulatory agency with no authority over State or federal activities, so these comments are advisory only.

The Commission was briefed on this matter, and discussed the proposed condition at its meeting of September 25, 1997. The Commission based its discussion on the Delta Protection Act of 1992 and the Commission's adopted plan, "Land Use and Resource Management Plan for the Primary Zone of the Delta" and current information about fish screens and water diversions in the Delta.

The proposed blanket condition, to require installation of a fish screen on each water diversion as a condition of issuance of a Corps' nationwide permit is unreasonable based on the high cost of the installation of the fish screen in relationship to the cost of maintenance of an existing pump or siphon. In addition, based on the limited operation of many of the pumps and siphons, it is timely to put off adoption of such a condition until such time as data collected in current studies is released; until the current DWR study associated with Interim South Delta program is completed; and, if approved, the studies proposed under pending for Category III grant funds are completed. This information could then be used as a basis for implementing a regionwide plan to prioritize installation of fish screens to maximize the benefits of such a program.

Due to the high cost of installing screens, it would seem appropriate to defer initiation of such a program until such time as a regional plan is developed and funding sources identified to implement the program. Of course, new diversions will be screened under current policy, and existing diversions will continue to be screened as outlined in the current State policy.

We look forward to working with you on development and implementation of a reasonable and effective program to protect Delta aquatic species and to allow continuation of Delta agriculture in a cost-effective and efficient manner.

Sincerely,

Patrick J. McCarty  
Chairman

cc: U.S. Fish and Wildlife Service  
National Marine Fisheries Service